

## Identification of the Epidural Space

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Accurate localization of the epidural space by needle puncture depends on recognition of the passage of the needle tip from the dense ligamentum flavum to the much less dense epidural space and the abrupt arrest of the needle at this point. The various techniques which have been described to aid this identification can be categorized as indicators of loss of resistance to injection, or of the presence of a negative pressure in the epidural space. The latter category are probably less dependable than the former because a negative pressure can only be demonstrated in some 80 per cent of cases using the lumbar approach.<sup>1,2</sup> The loss of resistance test<sup>3</sup> (Dogliotti) in experienced hands is a simple and reliable method of localization. However, occasionally the loss of pressure may be artefactual due to thinning of the ligaments adjacent to hypertrophic muscles.<sup>4</sup> In such cases and in others where doubt as to the correct placement of the needle arises, deeper insertion of the needle carries the danger of dural puncture.

The following objective test for location of the epidural space has been found valuable. A second needle is introduced in the adjacent intervertebral space, its inclination and depth of insertion being identical to that of the first which is left *in situ*. The two needles are orientated so that their bevels are facing and 5 ml. of saline are rapidly injected. If both, and only if both, are in the epidural space, the

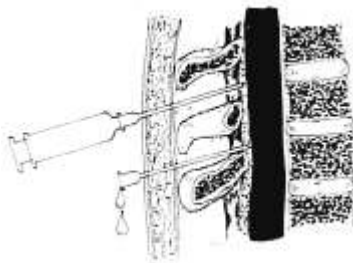


FIG. 1.

injection of saline through one needle will result in the leakage of the saline through the second (fig. 1). The emerging saline, being cold, can easily be differentiated from cerebrospinal fluid. Any doubts on this score can be settled by injecting methylene blue instead of saline, or by testing for the presence of glucose.

Mr. Moshe Ivri prepared the illustration.

### REFERENCES

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